PG26 PG:jar 8/21/95

:1

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

Filed:

June 6, 1995

Title:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS

# CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

on 9·27-95

Date Signature

Typed or printed name of person signing certificate

## CONSENT OF ASSIGNEE TO INVENTORSHIP CHANGE

The Assistant Commissioner FOR Patents

Washington, D.C. 20231

Sir:

Transkaryotic Therapies, Inc., a Delaware corporation, is the assignee of the above-identified application and does hereby consent to the addition of Michael F. Concino as a co-inventor in the application. A Certificate under 37 C.F.R. §3.73(b) specifying that the evidentiary document establishing ownership of the above-identified application in Transkaryotic Therapies, Inc. has

JC945 U.S. PTO 09/753385 been reviewed and which certifies that, to the best of my knowledge and belief, title is in Transkaryotic Therapies, Inc. is being filed concurrently.

Respectfully submitted

Richard F Selden, Founder and Chief Executive Officer for Transkaryotic Therapies, Inc.

Cambridge, MA 02139

Data: 041487

Applicant	(s): _	Michae	1 W.	Heart	lein an	d Jeffre	ey F.	Lemo	ntt		3.00 3.00 3.00 3.00
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certifies the	at it i	s the assigne	e of the c	entire right, t	itle and intere	est in the patent	application	on identifi	ed abo	ve by virtue of ei	ither:
A. [X] 4	An as and T	signment from	m the inv	entor(s) of t	he patent app	lication identifi	ed above.	The assi	gnmen which	t was recorded in a copy thereof is	the Patent s attached.
OR											
B. [ ]	A cha	ain of title fro	om the in	ventor(s) of	the patent app	plication identif	ied above,	, to the cu	urent a	ssignee as shown	below:
	1.	From:				To:					
		The docume	nt was re	corded in th	e Patent and	Trademark Offi	ce at				
		Reel	Frame	:		or for which a c	opy there	of is attac	hed.		
	2.	From:				To:					
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	3.	From:				To:	-				
	J.	The docume	at was re	corded in th	e Patent and	Trademark Off					
	•	Reel	Fram	e		or for which a	copy there	of is attac	hed.		
	[]	Additional	locument	s in the chai	n of title are	attached.					
- [ ] Copie	es of	assignments	or other (	documents is	the chain of	title are attach	ed.				
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The under	signe	ed (whose titl	e is supp	lied below)	is empowered	to act on beha	if of the a	ssignee.			
belief are	belie are p	ved to be tru unishable by	e; and fu fine or in	rther, that th nprisonment	ese statement, or both, und	s are made with	n the knov 1, Title 18	viedge the of the U	nited S	made on informa ful false statement states Code, and the	s and the lik
Date	:_	0915	95	·	<del>_</del>				-		
Name	:_	Richa	rd F	Selder	1				-		
Title	:_	Found	er ai	nd Chie	ef Exec	utive_O	ffice	<u>c</u>	-		
		16-	1	1 K	NXV						
Signatur	e :								-		

### ASSIGNMENT

WHEREAS, we, Michael W. Heartlein, Jeffrey F. Lemontt and Michael F. Concino have invented a certain improvement in "Chimeric Proteins for Use in Transport of a Selected Substance into Cells" described in an application for Letters Patent of the United States, Serial No. 08/470,058, filed June 6, 1995.

WHEREAS, TRANSKARYOTIC THERAPIES, INC. (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the State of Delaware, and having a usual place of business at 195 Albany Street, Cambridge, Massachusetts 02139, desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of the said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to the said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of

testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below. State/Commonwealth Then personally appeared before me the above-named Michael W. Heartlein and acknowledged that he executed the foregoing instrument as his free act and deed this \_\_\_\_\_\_\_\_, 19/5. Notary Public nd NOWEV (print name) (SEAL) My Commission expires -State/Commonwealth Then personally appeared before me the above-named Jeffrey F. Lemontt and acknowledged that he executed the foregoing instrument as his free act and deed this 13th day of Lecture, 1993. Notary Public (print name) (SEAL) My Commission expires 9/20/96

State/Commonwealth

of Messachustts

County of Messachustts

Then personally appeared before me the above-named Michael F. Concino and acknowledged that he executed the foregoing instrument as his free act and deed this 13th day of Messachuste 1995.

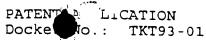
(SEAL)

Notary Public (SEAL)

My Commission expires 9 / 20 / 9 L

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### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

Filed:

June 6, 1995

For:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

a <u>9-27-95</u>

Date

JOAN Z. GRAHAM

Typed or printed name of person signing certificate

### TRANSMITTAL OF DECLARATION/POWER OF ATTORNEY

Box Missing Part
Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In response to the Notice to File Missing Parts dated July 27, 1995, enclosed herewith is an executed Declaration/Power of Attorney for filing in the captioned application. A petition for a one-month extension of time and the appropriate fee are being filed concurrently. A copy of the Notice is attached together with a check in the amount of \$65.00 in payment of the surcharge.

3C945 U.S. PTO 09/753385 PG26 PG:jar/jzg 09/12/95

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Michael W. Heartlein and Jeffrey F. Lemontt

Serial No.:

08/470,058

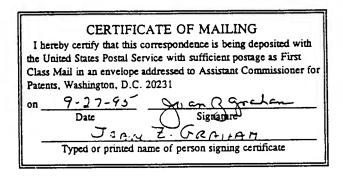
Filed:

June 6, 1995

Title:

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A

SELECTED SUBSTANCE INTO CELLS



# STATEMENT OF FACTS BY MICHAEL W. HEARTLEIN AND JEFFREY F. LEMONTT

The Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Michael W. Heartlein and Jeffrey F. Lemontt, of 167 Reed Farm Road, Boxborough, Massachusetts 01719 and 165 Fairway Drive, West Newton, Massachusetts 02165, respectively, declare and state that:

1. We are joint inventors of a patent application filed on behalf of Transkaryotic Therapies, Inc. and claiming chimeric proteins which comprise a functional domain and a carrier domain, nucleic acids encoding such chimeric proteins and uses therefor. We have been informed that this patent application was granted a

3C945 U.S. PTO 09/753385 filing date of June 6, 1995 and given Serial No. 08/470,058 by the United States Patent and Trademark Office.

- 2. We have been given a complete copy of U.S. Patent Application Serial No. 08/470,058 as it was originally filed on June 6, 1995, and we have studied this material prior to making this Statement of Facts document.
- 3. We understand that the patent laws of the United States require that each designated inventor must have made a material contribution to the conception of the invention claimed in the U.S. patent application.
- 4. Michael F. Concino did materially contribute to the conception of the invention claimed in Serial No. 08/470,058 as filed. Therefore, it is our belief that he is a joint inventor of the invention claimed in U.S. Patent Application Serial No. 08/470,058.
- 5. At the time the application was filed, Michael F. Concino was not designated a co-inventor when, in fact, he was a co-inventor and should be so designated.
- 6. At the time the above-referenced application was filed, we did not understand the law of inventorship and the concept of "material contribution" and as a result, Michael F. Concino was not named as an inventor on this document.
- 7. The possibility of an unintentional error in inventorship was brought to the attention of Patricia Granahan (Reg. No. 32,227), the Attorney at Hamilton, Brook, Smith & Reynolds, P.C. (HBSR) for Transkaryotic Therapies, Inc. by Linda M. Chinn, Esq., Manager of Intellectual Property, Transkaryotic Therapies, Inc.

8. Our decision not to include Michael F. Concino as an inventor in the above-identified patent application was without any deceptive intention.

We further declare that all statements made herein of our knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Michael W. Heartlein

preniber 13,1

Jeffrey F. Lemontt

September 13, 1995

C.F.R. §1.56.

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## <u>Declaration</u> for Patent Application

As a named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name;

I believe I am the original, first and sole inventor (if only one name is listed) or an original, first and joint inventor (if plural names are listed in the signatory page(s) commencing at page 3 hereof) of the subject matter which is claimed and for which a patent is sought on the invention entitled

CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED	SUBSTANCE INTO CELLS
the specification of which (check one)	
[ X ] is attached hereto.	
[ ] was filed on Application Serial No	as
and was amended on	(if applicable).
I hereby state that I have reviewed and contents of the above-identified specification claims, as amended by any amendment referred	on, including the
I acknowledge the duty to disclose info	cmation which is

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

known by me to be material to patentability as defined in 37

#### Prior Foreign Application(s) Priority Claimed [ ] [ ] (Day/Month/Year filed) (Number) (Country) Yes No [ ] (Day/Month/Year filed) (Number) (Country) No [ ] (Day/Month/Year filed) (Number) (Country)

and

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information known by me to be material to patentability as defined in 37 C.F.R. §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned)

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned)

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

I also hereby grant additional Powers of Attorney to the following attorney(s) and/or agent(s) to file and prosecute an international application under the Patent Cooperation Treaty based upon the above-identified application, including a power to meet all designated office requirements for designated states.

	·	
David E. Brook	Registration No.	22,592
James M. Smith	Registration No.	28,043
Leo R. Reynolds	Registration No.	20,884
Richard A. Wise	Registration No.	18,041
Patricia Granahan	Registration No.	32,227
Mary Lou Wakimura	Registration No.	31,804
Thomas O. Hoover	Registration No.	32,470
Alice O. Carroll	Registration No.	33,542
N. Scott Pierce	Registration No.	34,900

all of Hamilton, Brook, Smith and Reynolds, P.C., Two Militia Drive, Lexington, Massachusetts 02173;

Send correspondence to: Patricia Granahan, Esq.
Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA 02173
Direct telephone calls to: Patricia Granahan, Esq.
617-861-6240

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole				
or first inventor	Michael W. Heartlein			
Inventor's	michael w. neartieth			
Signature				
Residence	167 Reed Farm Road			
	Boxborough, Massachusetts 01719			
Citizenship	II C A			
Post Office Address	same as above			
Full name of second joint	,			
inventor if any				
inventor, if any	Jeffrey F. Lemontt			
Signature	Do to			
Signature Residence	Date			
Red I de liet	West Newton, Massachusetts 02165			
Citizenship_	West Newton, Massachusetts 02105			
Post Office Address	U.S.A.			
	same as above			
Full name of third joint				
inventor, if any				
Third Inventor's	<del>-</del>			
Signature	Date			
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Post Office Address				
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Full name of fourth joint				
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# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## Declaration for Patent Application

As a named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name;

I believe I am the original, first and sole inventor (if only one name is listed) or an original, first and joint inventor (if plural names are listed in the signatory page(s) commencing at page 3 hereof) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Chimeric Proteins f	or Use in Tran	sport of a Selected	
Substance into Cel			
the specification of which	h (check one)		
[ ] is attached hereto.			
(X) was filed onJur	ne 6, 1995	as United States App	olication
Number or PCT Inter	national Applicat	ion Serial No. 08/470	,058
and was amended on		(if applicable).	_
above-identified specific amendment referred to abo	ove.		•
be material to patentabi	Itth se delived in	nformation which is kno 37 C.F.R. §1.56.	
I hereby claim for Code, \$119 of any foreig listed below and have al or inventor's certificat on which priority is cla	n application(s) so identified below the having a filing	efits under Title 35, Un for patent or inventor's ow any foreign applicati date before that of the	on for patent
	Prior Foreign Ap	plication(s)	Priority Not Claimed
	(Country)	(Day/Month/Year filed)	[ ]
(Number)	(00=00=1)		[ ]
(Number)	(Country)	(Day/Month/Year filed)	
(Number)	(Country)	(Day/Month/Year filed)	( ) .
I hereby claim the bene provisional application	fit under 35 U.S.( (s) listed below.	c. §119(e) of any United	States
(Application Number)		(Filing Date)	
(Application Number)		(Filing Date)	

I hereby claim the benefit under Title 35, United States Code, \$120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, \$112, I acknowledge the duty to disclose information known by me to be material to patentability as defined in 37 C.F.R. \$1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.) (Filing date) (Status, patented, pending, abandoned) (Application Serial No.) (Filing date) (Status, patented, pending, abandoned) As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. I also hereby grant additional Powers of Attorney to the following attorney(s) and/or agent(s) to file and prosecute an international application under the Patent Cooperation Treaty based upon the above-identified application, including a power to meet all designated office requirements for designated states: Reg. No. 32,470 Reg. No. 33,542 Reg. No. 22,592 Thomas O. Hoover David E. Brook Alice O. Carroll Reg. No. 28,043 James M. Smith Reg. No. 34,900 N. Scott Pierce Reg. No. 20,884 Leo R. Reynolds Patricia Granahan Reg. No. 32,227 Reg. No. 18,041 Richard A. Wise Mary Lou Wakimura Reg. No. 31,804 all of Hamilton, Brook, Smith and Reynolds, P.C., Two Militia Drive, Lexington, Massachusetts 02173; and send correspondence to: Patricia Granahan, Esq., Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA 02173 Patricia Granahan, Esq. Direct telephone calls to: Hamilton, Brook, Smith & Reynolds, P.C. Two Militia Drive, Lexington, MA 02173 I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. Full name of sole Michael W. Heartlein or first inventor Inventor's Signature 1 167 Reed Farm Road Residence 01719 Boxborough, MA U.S.A. Citizenship Post Office Address same

Full name of second joint	7.66man F	Lemontt
inventor, if any	Jerries i.	10mo
Second Inventor's Signature	- Fermett	Date Sept 12, 1991
Signature 165 Hairwa	ay Drive	
West Newto	on, MA 02165	
Citizenship U.S.A.		
Post Office Address S		
FORC OLLEGE HALLS SEE		
Full name of third joint		aina
inventor, if any	Michael F.	Concino
Third Investor's	Conerio	Date Sept. 11, 1995
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	IA 02159	
	-	
Citizenship U.S.A.		
Post Office Address Sa	me	
		•
Full name of fourth joint	•	
inventor, if any		
Fourth Inventor's		Data
		Date
Residence		
Citizenship		
Post Office Address		
Full name of fifth joint	•	•
inventor, if any		
Fifth Inventor's	•	
signature		Date
Residence		
Citizenship		
Post Office Address		
		·

Applicant or Patentes: Michael W. Hoartlean and Jeff. 49 F. Attorney's
Serial or Patent No.: 08/470.058 Lemont Docket No.: TKT93-01
Filed or Issued: June 6, 1995
FOR: CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED SUBSTANCE INTO CELLS
VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(c) - SMALL BUSINESS CONCERN I hereby declare that I am
[] the owner of the small business concern identified below:
[x] an official of the small business concern empowered to act on behalf
of the concern identified below:
NAME OF CONCERN Transkaryotic Therapies, Inc.
ADDRESS OF CONCERN_ 195 Albany Street
Cambridge, Massachusetts 02139
I hereby declare that the above identified small business concern qualifies
as a small business concern as defined in 13 CFR 121.12, and reproduced in
37 CFR 1.9(d), for purposes of paying reduced fees to the United States
Patent and Trademark Office, in that the number of employees of the
concern, including those of its affiliates, does not exceed 500 persons.
For purposes of this statement, (1) the number of employees of the business
concern is the average over the previous fiscal year of the concern of the
persons employed on a full-time, part-time or temporary basis during each
of the pay periods of the fiscal year, and (2) concerns are affiliates of
each other when either, directly or indirectly, one concern controls or has
the power to control the other, or a third party or parties controls or has
the power to control both.
<del>-</del>
I hereby declare that rights under contract or law have been conveyed to
and remain with the small business concern identified above with regard to
the invention, entitled CHIMERIC PROTEINS FOR USE IN TRANSPORT OF A SELECTED SUBSTANC
INTO CELLS by inventor(s) Michael W. Heartlein and Jeffrey F. Lemontt
described in
[ ] the specification filed herewith
[X] application serial no. 08/470,058 , filed June 6, 1995
[ ] patent no, issued

If the rights held by the above identified small business concern are not dividual, concern or organiza exclusive, each having rights to the invention is listed below and no rights to the Envention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 GFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small publicass concern under 37 CFR 1.9(d), or a nonprofit rganization under 37 CFR 1.9(e). \*NOTE: Separate verified statements are required from each named person, concern or arganization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

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[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION
TAME
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[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROPIT ORGANIZATION
acknowledge the duty to file, in this application or patent, notifica-
ion of any change in status resulting in loss of entitlement to small
entity status prior to paying, or at the time of paying, the earliest of
the issue fee or any maintenance fee due after the date on which status
s a small entity is no longer appropriate. (37 CFR 1.28(b))
hereby declare that all statements made herein of my own knowledge are
rue and that all statements made on information and belief are believed
o be true; and further that these statements were made with the knowledge
hat willful false statements and the like so made are punishable by fine
or imprisonment, or both, under section 1001 of Title 18 of the United
tates Code, and that such willful false statements may jeopardize the
alidity of the application, any patent issuing thereon, or any patent to
which this verified statement is directed.
nich chip verilled bootement in directed.
AME OF PERSON SIGNING Richard F Selden
ITLE OF PERSON OTHER THAN OWNER President and Chief Executive Officer
DDRESS OF PERSON SIGNING Transkaryotic Therapies, Inc.
195 Albany/Screet, Cambridge, Massachusetts 02139
(27.2.10)
IGNATURE DATE ( ) (09 9)